

Remarks

Claims 1, 3-31, and 33-60 are now pending in this application. Claims 19-21, 24-28, 30, 49-51, 54-58, and 60 are rejected. Claims 1, 3-18, 31, and 33-48 are allowed. Claims 2 and 32 have been canceled. Claims 22, 23, 29, 52, 53, and 59 have been objected to as containing allowable subject matter but depending from a rejected base claim. No new matter has been added.

The rejection of Claims 21 and 51 under 35 U.S.C. § 102(b) as being unpatentable over Pyle et al. (U.S. Patent No. 5,467,286) is respectfully traversed.

Pyle et al. describe a metering unit that is provided with a first non-volatile memory having a first section for storing main functionality firmware and a second section for storing boot code (column 2, lines 23-26). The boot code includes a reset portion for resetting the metering unit and a firmware update section for downloading external firmware to the first section (column 2, lines 26-28). The firmware update section includes a writing routine for writing the external firmware to the first section (column 2, lines 28-30). The metering unit is also provided with a second memory (column 2, lines 30-31). The external firmware is downloaded to the first section of the first non-volatile memory by executing the firmware update section (column 2, lines 31-34). While executing the firmware update section, the writing routine is copied to the second memory and executed therefrom to write the external firmware to the first section of the first non-volatile memory (column 2, lines 34-37).

Claim 21 recites a method for metering energy consumption with a microcomputer-controlled electric meter having a memory, said method comprising the steps of “controlling the meter, using a first program in a first portion of the memory, to generate metering quantities for a voltage source; writing a second program into a second portion of the memory; and switching control of the meter to the second program when the second program has been written to the second portion of the memory.”

Pyle et al. do not describe or suggest a method for metering energy consumption with a microcomputer-controlled electric meter having a memory, the method including the steps of controlling the meter, using a first program in a first portion of the memory, to generate metering quantities for a voltage source, writing a second program into a second portion of

the memory, and switching control of the meter to the second program when the second program has been written to the second portion of the memory.

More specifically, Pyle et al. do not describe or suggest writing a second program into a second portion of the memory, and switching control of the meter to the second program when the second program has been written to the second portion of the memory. Rather, Pyle et al. describe copying the writing routine to the second memory and executing therefrom to write the external firmware to the first section of the first non-volatile memory. For the reasons set forth above, Claim 21 is submitted to be patentable over Pyle et al.

Claim 51 recites an electric meter for metering energy consumption, said meter comprising a microcomputer and a memory, said microcomputer configured to “control said meter, using a first program in a first portion of said memory, to generate metering quantities for a voltage source; write a second program into a second portion of said memory; and switch to controlling said meter using the second program when the second program has been written to said second portion of said memory.”

Pyle et al. do not describe or suggest an electric meter for metering energy consumption, the meter including a microcomputer and a memory, the microcomputer configured to control the meter, using a first program in a first portion of the memory, to generate metering quantities for a voltage source, write a second program into a second portion of the memory, and switch to controlling the meter using the second program when the second program has been written to the second portion of the memory.

More specifically, Pyle et al. do not describe or suggest the microcomputer configured to write a second program into a second portion of the memory, and switch to controlling the meter using the second program when the second program has been written to the second portion of the memory. Rather, Pyle et al. describe copying the writing routine to the second memory and executing therefrom to write the external firmware to the first section of the first non-volatile memory. For the reasons set forth above, Claim 51 is submitted to be patentable over Pyle et al.

For at least the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 21 and 51 be withdrawn.

The rejection of Claims 24-26 and 54-56 under 35 U.S.C. § 102(b) as being unpatentable over Allgood (U.S. Patent No. 4,568,934) is respectfully traversed.

Allgood describes a centralized data communications system in which a plurality of groups of remote stations communicate with a central station over a respective plurality of communications channels each of which is shared by all the remote stations of a group. (column 1, lines 13-19). For any given communications channel interconnecting a section switch (17) with a group of remote stations, each of the remote stations of the group can be addressed by cycling through a predetermined number of tone bursts (column 6, lines 27-32). If 16 remote stations each containing 16 information channels are connected to each communications channel, a total of 256 tone bursts will serve to address and sequentially connect each of the information channels to the communications channel (column 6, lines 32-35). A first step (1628) is a calculation of a total daily sum of the energy consumption data which has been acquired in a just completed scan of all energy sensors at all of the remote stations (column 67, lines 37-40). This total daily sum (TOTAL 2) is then stored by a CPU at step (1629) in a memory location identified as "scan 2" (column 6, lines 40-43).

Claim 24 recites a method for metering energy consumption with an electric meter, said method comprising the steps of "generating metering quantities for a first voltage source, wherein the first voltage source generates multiple voltages; receiving input data from other meters associated with a load; and processing the input data to produce a value representative of a total energy consumed; and changing a metering form type of the meter in response to a change in at least one of the multiple voltages."

Allgood does not describe or suggest a method for metering energy consumption with an electric meter, the method including the steps of generating metering quantities for a first voltage source, where the first voltage source generates multiple voltages, receiving input data from other meters associated with a load, and processing the input data to produce a value representative of a total energy consumed, and changing a metering form type of the meter in response to a change in at least one of the multiple voltages.

More specifically, Allgood does not describe or suggest changing a metering form type of the meter in response to a change in at least one of the multiple voltages. Rather, Allgood describes interconnecting the section switch with the group of remote stations, addressing each of the remote stations by cycling through a predetermined number of tone

bursts, and calculating a total daily sum of the energy consumption data which has been acquired in a just completed scan of all energy sensors at all of the remote stations. For the reasons set forth above, Claim 24 is submitted to be patentable over Allgood.

Claims 25-26 depend from independent Claim 24 which is submitted to be patentable over Allgood. When the recitations of Claims 25-26 are considered in combination with the recitations of Claim 24, Applicants submit that dependent Claims 25-26 likewise are patentable over Allgood.

Claim 54 recites an electric meter for metering energy consumption, said meter configured to “generate metering quantities for a first voltage source, wherein said first voltage source generates multiple voltages; receive input data from other meters associated with a load; process the input data to produce a value representative of a total energy consumed; and enable changing a metering form type of said meter in response to a change in at least one of the multiple voltages.”

Allgood does not describe or suggest an electric meter for metering energy consumption, the meter configured to generate metering quantities for a first voltage source, where the first voltage source generates multiple voltages, receive input data from other meters associated with a load, process the input data to produce a value representative of a total energy consumed, and enable changing a metering form type of the meter in response to a change in at least one of the multiple voltages.

More specifically, Allgood does not describe or suggest the meter configured to enable changing a metering form type of the meter in response to a change in at least one of the multiple voltages. Rather, Allgood describes interconnecting the section switch with the group of remote stations, addressing each of the remote stations by cycling through a predetermined number of tone bursts, and calculating a total daily sum of the energy consumption data which has been acquired in a just completed scan of all energy sensors at all of the remote stations. For the reasons set forth above, Claim 54 is submitted to be patentable over Allgood.

Claims 55-56 depend from independent Claim 54 which is submitted to be patentable over Allgood. When the recitations of Claims 55-56 are considered in combination with the

recitations of Claim 54, Applicants submit that dependent Claims 55-56 likewise are patentable over Allgood.

For the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 24-26 and 54-56 be withdrawn.

The rejection of Claims 19, 20, 49, and 50 under 35 U.S.C. § 102(e) as being unpatentable over Rector et al. (U.S. Patent No. 6,115,676) is respectfully traversed.

Rector et al. describe an electronic register for use in connection with an electricity meter (column 1, lines 6-8). In the context of a register (10), a routine (200) is described which facilitates ensuring that the desired affect is achieved when a load control command is to be executed (column 10, lines 23-26). More specifically, the register normally operates so that at the end of every minute, a snap-shot of the pulses collected in the previous minute is taken and stored in a queue for subsequent processing (column 10, lines 26-29). In addition, and as an aid in evaluating the effect of load control commands and to detect load control tampering, the register is programmed to obtain a snapshot of load profile information (column 10, lines 29-32). Specifically, when a load profile snapshot command is received by the register, the register saves, in memory, the kilowatthour pulses for the minute before, minute during and minute after the command was received (column 10, lines 32-36). The accumulated pulse data is then transmitted by the register to a service control center (column 10, lines 36-38).

Claim 19 recites a method for metering energy consumption with an electric meter, said method comprising the steps of “generating metering quantities for a voltage source, including generating revenue-related data, wherein the voltage source generates multiple voltages; receiving a request for a communication session from an external device; producing a static copy of selected revenue-related data in response to the communication session request; providing the static copy of the selected revenue-related data to the external device while continuing to generate metering quantities; and changing a metering form type of the meter in response to a change in at least one of the multiple voltages.”

Rector et al. do not describe or suggest a method for metering energy consumption with an electric meter, the method including the steps of generating metering quantities for a voltage source, including generating revenue-related data, where the voltage source generates

multiple voltages, receiving a request for a communication session from an external device, producing a static copy of selected revenue-related data in response to the communication session request, providing the static copy of the selected revenue-related data to the external device while continuing to generate metering quantities, and changing a metering form type of the meter in response to a change in at least one of the multiple voltages.

More specifically, Rector et al. do not describe or suggest changing a metering form type of the meter in response to a change in at least one of the multiple voltages. Rather, Rector et al. describe saving, in memory, the kilowatthour pulses for the minute before, minute during and minute after a load profile snapshot command was received, and transmitting the accumulated pulse data to a service control center. For the reasons set forth above, Claim 19 is submitted to be patentable over Rector et al.

Claim 20 depends from independent Claim 19 which is submitted to be patentable over Rector et al. When the recitations of Claim 20 are considered in combination with the recitations of Claim 19, Applicants submit that dependent Claim 20 likewise is patentable over Rector et al.

Claim 49 recites an electric meter for metering energy consumption, said meter being configured to “generate metering quantities for a voltage source, including revenue-related data, wherein said voltage source generates multiple voltages; receive a request for a communication session from an external device; produce a static copy of selected revenue-related data in response to the communication session request; and provide the static copy of the selected revenue-related data to the external device while continuing to generate metering quantities; and enable changing a metering form type of said meter in response to a change in at least one of the multiple voltages.”

Rector et al. do not describe or suggest an electric meter for metering energy consumption, the meter being configured to generate metering quantities for a voltage source, including revenue-related data, where the voltage source generates multiple voltages, receive a request for a communication session from an external device, produce a static copy of selected revenue-related data in response to the communication session request, and provide the static copy of the selected revenue-related data to the external device while continuing to generate metering quantities, and enable changing a metering form type of the meter in response to a change in at least one of the multiple voltages.

More specifically, Rector et al. do not describe or suggest the meter being configured to enable changing a metering form type of the meter in response to a change in at least one of the multiple voltages. Rather, Rector et al. describe saving, in memory, the kilowatthour pulses for the minute before, minute during and minute after a load profile snapshot command was received, and transmitting the accumulated pulse data to a service control center. For the reasons set forth above, Claim 49 is submitted to be patentable over Rector et al.

Claim 50 depends from independent Claim 49 which is submitted to be patentable over Rector et al. When the recitations of Claim 50 are considered in combination with the recitations of Claim 49, Applicants submit that dependent Claim 50 likewise is patentable over Rector et al.

For the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 19, 20, 49, and 50 be withdrawn.

The rejection of Claims 27, 30, 57, and 60 under 35 U.S.C. § 103(a) as being unpatentable over Atherton et al. (U.S. Patent No. 5,315,235), referred to as Atherton et al. I, is respectfully traversed.

Atherton et al. I describe that in a normal execution mode, an operating system executes an infinite loop, i.e., unless an interrupt or "new priority" flag is set, the operating system continues to execute through the loop (column 2, lines 15-18). To convert a register component having the present operating system from a Demand-Only register to a Time-of-Use and Demand register, for example, task tables are loaded into the register component and a different mode is selected (column 2, lines 54-58). A register component means includes an ASIC that includes a microcontroller 152 coupled to an address, data, control, and a macro bus 154 (column 4, lines 44-46).

Claim 27 recites a method for metering energy consumption with an electric meter, said method comprising the steps of "operating the meter in a first mode of operation; periodically checking, at temporal period boundaries, for pending changes to the mode of operation; effecting the change to the mode of operation after a periodic check; and checking whether a pending action was scheduled for a period boundary crossed by a power failure affecting the energy consumption."

Atherton et al. I do not describe or suggest a method for metering energy consumption with an electric meter, the method including the steps of operating the meter in a first mode of operation, periodically checking, at temporal period boundaries, for pending changes to the mode of operation, effecting the change to the mode of operation after a periodic check, and checking whether a pending action was scheduled for a period boundary crossed by a power failure affecting the energy consumption.

More specifically, Atherton et al. I do not describe or suggest checking whether a pending action was scheduled for a period boundary crossed by a power failure affecting the energy consumption. Rather, Atherton et al. I describe continuing to execute through the loop unless an interrupt or "new priority" flag is set, converting a register component having the present operating system from a Demand-Only register to a Time-of-Use and Demand register, and a register component means that includes an ASIC that includes a microcontroller. For the reasons set forth above, Claim 27 is submitted to be patentable over Atherton et al. I.

Claim 30 depends from independent Claim 27 which is submitted to be patentable over Atherton et al. I. When the recitations of Claim 30 are considered in combination with the recitations of Claim 27, Applicants submit that dependent Claim 30 likewise is patentable over Atherton et al. I.

Claim 57 recites an electric meter for metering energy consumption, said meter comprising a microcomputer configured to "operate the meter in a first mode of operation; periodically check, at temporal period boundaries, for pending changes to the mode of operation; effect the change to the mode of operation after a periodic check; and check whether a pending action was scheduled for a period boundary crossed by a power failure affecting the energy consumption."

Atherton et al. I do not describe or suggest an electric meter for metering energy consumption, the meter including a microcomputer configured to operate the meter in a first mode of operation, periodically check, at temporal period boundaries, for pending changes to the mode of operation, effect the change to the mode of operation after a periodic check, and check whether a pending action was scheduled for a period boundary crossed by a power failure affecting the energy consumption.

More specifically, Atherton et al. I do not describe or suggest a microcomputer configured to check whether a pending action was scheduled for a period boundary crossed by a power failure affecting the energy consumption. Rather, Atherton et al. I describe continuing to execute through the loop unless an interrupt or "new priority" flag is set, converting a register component having the present operating system from a Demand-Only register to a Time-of-Use and Demand register, and a register component means that includes an ASIC that includes a microcontroller. For the reasons set forth above, Claim 57 is submitted to be patentable over Atherton et al. I.

Claim 60 depends from independent Claim 57 which is submitted to be patentable over Atherton et al. I. When the recitations of Claim 60 are considered in combination with the recitations of Claim 57, Applicants submit that dependent Claim 60 likewise is patentable over Atherton et al. I.

Moreover, Applicants respectfully submit that the Section 103 rejection of Claims 27, 30, 57, and 60 is not a proper rejection. The mere assertion that such a method and electric meter would have been obvious to one of ordinary skill in the art does not support a prima facie obvious rejection. Rather, each allegation of what would have been an obvious matter of design choice must always be supported by citation to some reference work recognized as standard in the pertinent art, and Applicants given an opportunity to challenge the correctness of the assertion or the repute of the cited reference. Applicants have not been provided with the citation to any reference supporting the combination made in the rejection. The rejection, therefore, fails to provide the Applicants with a fair opportunity to respond to the rejection, and fails to provide the Applicants with the opportunity to challenge the correctness of the rejection. Therefore, Applicants respectfully request that the Section 103 rejection be withdrawn.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 27, 30, 57, and 60 be withdrawn.

The rejection of Claims 28 and 58 under 35 U.S.C. § 103(a) as being unpatentable over Atherton et al. I in view of Atherton et al. (U.S. Patent No. 5,270,949), referred to as Atherton et al. II, is respectfully traversed.

Atherton et al. I is described above.

Atherton et al. II describe that at initialization after power-up, a register function value is compared with known values associated with respective modes of operation, and if the values do not match a recognized value, then a register (13) self-programs its non-volatile EEPROM (15) with a set of default values that are stored in a ROM (19) (column 2, lines 38-44).

Claim 28 depends on Claim 27 which recites a method for metering energy consumption with an electric meter, said method comprising the steps of "operating the meter in a first mode of operation; periodically checking, at temporal period boundaries, for pending changes to the mode of operation; effecting the change to the mode of operation after a periodic check; and checking whether a pending action was scheduled for a period boundary crossed by a power failure affecting the energy consumption."

Neither Atherton et al. I nor Atherton et al. II, alone or in combination, describe or suggest a method for metering energy consumption with an electric meter, the method including the steps of operating the meter in a first mode of operation, periodically checking, at temporal period boundaries, for pending changes to the mode of operation, effecting the change to the mode of operation after a periodic check, and checking whether a pending action was scheduled for a period boundary crossed by a power failure affecting the energy consumption.

More specifically, neither Atherton et al. I nor Atherton et al. II, considered alone or in combination, describe or suggest checking whether a pending action was scheduled for a period boundary crossed by a power failure affecting the energy consumption. Rather, Atherton et al. I describe continuing to execute through the loop unless an interrupt or "new priority" flag is set, converting a register component having the present operating system from a Demand-Only register to a Time-of-Use and Demand register, and a register component means that includes an ASIC that includes a microcontroller. Atherton et al. II describe comparing, at initialization after power-up, a register function value with known values associated with respective modes of operation, and self-programming the register's non-volatile EEPROM with a set of default values that are stored in a ROM if the values do not match a recognized value. For the reasons set forth above, Claim 27 is submitted to be patentable over Atherton et al. I in view of Atherton et al. II.

When the recitations of Claim 28 are considered in combination with the recitations of Claim 27, Applicants submit that dependent Claim 28 likewise is patentable over Atherton et al. I in view of Atherton et al. II.

Claim 58 depends on Claim 57 which recites an electric meter for metering energy consumption, said meter comprising a microcomputer configured to "operate the meter in a first mode of operation; periodically check, at temporal period boundaries, for pending changes to the mode of operation; effect the change to the mode of operation after a periodic check; and check whether a pending action was scheduled for a period boundary crossed by a power failure affecting the energy consumption."

Neither Atherton et al. I nor Atherton et al. II, alone or in combination, describe or suggest an electric meter for metering energy consumption, the meter including a microcomputer configured to operate the meter in a first mode of operation, periodically check, at temporal period boundaries, for pending changes to the mode of operation, effect the change to the mode of operation after a periodic check, and check whether a pending action was scheduled for a period boundary crossed by a power failure affecting the energy consumption.

More specifically, neither Atherton et al. I nor Atherton et al. II, considered alone or in combination, describe or suggest a microcomputer configured to check whether a pending action was scheduled for a period boundary crossed by a power failure affecting the energy consumption. Rather, Atherton et al. I describe continuing to execute through the loop unless an interrupt or "new priority" flag is set, converting a register component having the present operating system from a Demand-Only register to a Time-of-Use and Demand register, and a register component means that includes an ASIC that includes a microcontroller. Atherton et al. II describe comparing, at initialization after power-up, a register function value with known values associated with respective modes of operation, and self-programming the register's non-volatile EEPROM with a set of default values that are stored in a ROM if the values do not match a recognized value. For the reasons set forth above, Claim 57 is submitted to be patentable over Atherton et al. I in view of Atherton et al. II.

When the recitations of Claim 58 are considered in combination with the recitations of Claim 57, Applicants submit that dependent Claim 58 likewise is patentable over Atherton et al. I in view of Atherton et al. II.

Moreover, Applicants respectfully submit that the Section 103 rejection of Claims 28 and 58 is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. Neither Atherton et al. I in view of Atherton et al. II, considered alone or in combination, describe or suggest the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Atherton et al. I with Atherton et al. II because there is no motivation to combine the references suggested in the art.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicants' disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicants' disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion or motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

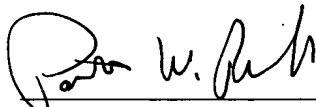
Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Specifically, Atherton et al. I teaches continuing to execute through the loop unless an interrupt or "new priority" flag is set, converting a register component having the present operating system from a Demand-Only register to a Time-of-Use and Demand register, and a register component means that includes an ASIC that includes a microcontroller. Atherton et al. II teaches comparing, at initialization after power-up, a register function value with known values associated with respective modes of operation, and self-programming the register's non-volatile EEPROM with a set of default values that are

stored in a ROM if the values do not match a recognized value. Since there is no teaching nor suggestion in the cited art for the combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejection of Claims 28 and 58 be withdrawn.

For at least the reasons set forth above, Applicants respectfully requests that the Section 103 rejection of Claims 28 and 58 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Patrick W. Rasche', is written over a horizontal line.

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